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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/806,507

03/23/2004

Avigdor Eldar

P18438

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7590

09/29/2006

KONRAD RAYNES & VICTOR, LLP.

ATTN: INT77

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BEVERLY HILLS, CA 90212

EXAMINER

MARTINEZ, DAVID E

ART UNIT

PAPER NUMBER

2181

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/806,507

Applicant(s)

ELDAR ET AL.

Examiner

David E. Martinez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 10,11,21,22,34 and 35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9,12-20 and 23-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
FRITZ FLEMING  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

9/27/2006

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 9/26/05.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

Applicant's election without traverse of Species 1 (claims 1-9, 20, 12-19 and 25-33) in the reply filed on 9/11/06 is acknowledged. In addition, upon further review of the previous restriction requirement, the Examiner grouped claims 23-24 as part of Species 2. However, claims 23-24 read on Species 1 and not Species 2. Since the Applicant selected Species 1 for examination without traverse, claims 23-24 are being rejoined and grouped as reading on Species 1, and thus claims 1-9, 20, 12-19 and 23-33 are being presented as examined.

### *Drawings*

The drawings are objected to because they appear to not show what the specification discloses. In the detailed description of figure 1, it calls for "An adapter device driver 14 executes in the memory 6 to provide an interface between the operating system 8 and the adapter 10". Figure 1 shows the adapter device driver 14 being outside of memory 6. Figure 1 also fails to show any bus connected to the memory 6, thus the memory being some kind of floating inaccessible element. From the specification, it appears that the adapter device driver 14 should be included inside memory 6. Also, it is well known in the art that operating systems run inside system memory and thus it would only make sense to include it as well inside memory 6. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be

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necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The disclosure is objected to because of the following informalities: In the detailed description of figure 1, an adapter device driver 14 is shown to be connected to element 10 through bus element 11. A device driver cannot be connected to any bus (or any piece of hardware) since by definition a device driver is directed to a piece of code or instructions (software) and not to a physical structure.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 25 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims invention the claimed invention does not fall within at least one of the four categories of patent eligible subject matter recited in 35 U.S.C. 101 (process, machine, manufacture, or composition of matter). "The claim calls for "An article of manufacture" which according to the specification, under "Additional Embodiment Details", is disclosed as: "The term "article of manufacture" as used herein refers to code or..." and then further below, "In some cases, the article of manufacture in which code is implemented may comprise a transmission media, such as a network transmission line, wireless transmission media, signals propagating through space, radio waves, infrared signals, etc. Thus the "article

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of manufacture” may comprise the medium in which the code is embodied”. It is not clear how an article of manufacture can be a network transmission line by itself having code? Neither one of the above types of “articles of manufacture” embodiments shown in the specification fall within any of the four categories of patent eligible subject matter. They are only directed to carrier waves and transmission signals which are non-statutory subject matter

Due to claims 26-30 being dependent from claim 25, they suffer from the same deficiencies as their parent claim and thus are rejected under the same rationale

***Claim Rejections - 35 USC § 112-1<sup>st</sup> Paragraph***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 12 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for circuitry being hardware <sup>or</sup> ~~of~~ hardware having software, does not reasonably provide enablement for circuitry being solely software. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. The specification, under “Additional Embodiment Details”, discloses how a circuit performs operations (steps) and then refers to the circuit as being directed to as only software. Circuitry by definition cannot be software. One of ordinary skill in the art would not be able to implement the claimed invention having a circuit be solely software.

Due to claims 13-19 being dependent from claim 12, they suffer from the same deficiencies and are rejected under the same rationale..

***Claim Rejections - 35 USC § 112-2<sup>nd</sup> Paragraph***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-6, 12-19 and 23-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "recent" in claim 3, is a relative term which renders the claim indefinite. The term "recent" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term recent is subjective as to how long after a packet has been received relative to a prior packet. Is isn't clear if the applicant is referring to receiving a third packet relative to the first and the subsequent packet that were already received or to a "recent" packet which could be any packet received after a first and a subsequent packet with any number of packets received in between. The use of the term "recent" can be found in lines 2, 4, 6, 7, 8, 10 and 11. Also in lines 5-6, the term "wherein the first packet and at least one subsequent packet received between the first packet and the recent subsequent packet" also renders the claim indefinite since it is not clear how the first received packet is received between the first packet and the first packet and the subsequent packet. In addition in line 7, the term "that that" appears to be a typo?

With regards to claim 2, the term "waiting to receive at least one more subsequent packet before transferring the first packet..." in line 5 renders the claim indefinite. It is not clear if the transferring is referring to a totally new transferring step to some location, or if it's referring to the previously recited transferring step of claim 1, transferring to the buffer. The claim calls for the packets to be capable of fitting into the buffer, but it doesn't positively recite if they are actually being transferred to that cited buffer.

Claims 4, 15 and 28 recites the limitation "first packets" and "subsequent packets" in lines 1-2 of each of the claims. There is insufficient antecedent basis for this limitation in the claim.

With regards to claim 5, the term "wherein all packets in at least one buffer" renders the claim indefinite since it is not clear if the "at least one buffer" is referring to the recited buffer in claim 1 or if it's referring to a totally new and distinct buffer.

With regards to claims 6, 17 and 30, the term "that fits into the buffer with the first packet" renders the claim indefinite since it is not clear if it's referring to the descriptor fitting into the buffer or if it's referring to "each subsequent packet" fitting into the buffer.

With regards to claims 12, the term "a buffer" in line (i) renders the claim indefinite since it isn't clear if it's a totally new instance of a buffer or if it is referring to/is part of one of the "a plurality of buffers" that were recited in line 2. The terms "the buffer" in steps (ii), (iii), (v) and (vi), also render the claim indefinite since it isn't clear if "the buffer" is referring to the buffer or step (i) or to one of the buffers from line 1.

With further regards to claim 12, the claim calls for a system having "circuitry enabled to:" (lines 3-4) to perform method steps (i)-(vi). It isn't clear what exact physical structure is performing what particular step in the claim. Is it one big circuit performing all of steps (i)-(vi)? Also is the claim directed to a system or a circuitry or is it directed to a method. It appears to be some kind of hybrid claim having a system performing a method or a method implemented by a system. In addition, under "Additional Embodiment Details" in the specification, it discloses how the operations (steps) performed by the circuitry refers to circuitry as being only software. Circuitry by definition cannot be software. The metes and bounds of the claim aren't clear since it isn't clear what exactly is being covered by the circuitry or by the system or method claim.

With regards to claims 13, 24 and 26, they suffer from the same deficiency as claim 2 above and thus are rejected under the same rationale.

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With regards to claims 14 and 27, they suffer from the same deficiencies as claim 3 above and thus are rejected under the same rationale.

With regards to claim 16, in line 2, the term "in one buffer" suffers from the same deficiency as claim 5 above and thus rejected under the same rationale.

Claim 20 recites the limitation "the I/O device" in lines 1. There is insufficient antecedent basis for this limitation in the claim.

With regards to claims 23 and 25, they suffer from the same deficiencies as claim 12 above and thus are rejected under the same rationale.

With regards to claim 29, in lines 1-2, it suffers from the same deficiency as claim 5 above and thus is rejected under the same rationale.

Furthermore, since claims 13-19, 24 and 26-33 are dependent from claims 12, 23 and 25 respectively, they suffer from the same deficiencies as their parent claim and thus are rejected under the same rationale.

Due to the vagueness and a lack of clear definiteness in the claims, the claims have been treated on their merits as best understood by the examiner.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4-7, 9, 12, 15-18, 20, 23, 25, 28-31 and 33 rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 6,067,300 to Baumert et al. (hereinafter Baumert)

1. With regards to claims 1, 12, 23 and 25, Baumert teaches a method, comprising:



receiving a first packet [fig 3 element 54] for a buffer in memory [column 1 lines 23-27, lines 49-53 and column 3 lines 4-19, column 5 lines 13-36 referring to fig 3];

generating a descriptor [fig 4 element 74 included within descriptor memory element 22] indicating a length of the first packet [fig 4 element 74 "SOP" and "EOP" standing for start of packet and end of packet indicate a length of a packet as well as the "byte count" field] and a buffer address of the buffer [column 1 lines 23-27, lines 56 to column 2 line 5, column 3 lines 4-19, column 5 lines 27-60, column 6 lines 11-12, fig 1 element 22 shown in figure 4 including descriptor element 74];

receiving at least one subsequent packet following the first packet capable of fitting in the buffer with the first packet [column 5 lines 27-60];

generating a descriptor for each received subsequent packet [column 1 lines 23-27, lines 56 to column 2 line 5, column 3 lines 4-19, column 5 lines 27-60, column 6 lines 11-12, fig 1 element 22 shown in figure 4 including descriptor element 74];

transferring to the buffer the first packet and the at least one subsequent packet capable of fitting into the buffer [column 5 lines 27-60]; and

adding the descriptors of the first packet and the at least one subsequent packet written to the buffer to a descriptor array [column 5 lines 27-60, figure 4 descriptor memory 22 including element(s) 74].

2. With regards to claims 4, 15 and 28, Baumert teaches the method of claim 1, wherein the first packets and received subsequent packets are transferred to the buffer in response to a timer expiring [column 1 lines 23-27, lines 49-53 and column 3 lines 4-19, column 5 lines 13-36 referring to fig 3 – the transferring of a data packet into a buffer is done after a rising or falling of an edge of the clock within the system. The clock is a timer thus the transfer is done in response to a time expiring].

3. With regards to claims 5, 16 and 29, Baumert teaches the method of claim 1, wherein all packets in at least one buffer are processed by one processor and wherein packets in different buffers are capable of being processed by different processors [column 4 lines 21-32].

4. With regards to claims 6, 17 and 30, Baumert teaches the method of claim 1, wherein the descriptor generated for each subsequent packet that fits into the buffer with the first packet indicates a length of the subsequent packet [column 1 lines 23-27, lines 56 to column 2 line 5, column 3 lines 4-19, column 5 lines 27-60, column 6 lines 11-12, fig 1 element 22 shown in figure 4 including descriptor element 74].

5. With regards to claims 7, 18 and 31, Baumert teaches the method of claim 1, further comprising:

indicating in the descriptor for the first packet a number of packets included in the buffer, including the first packet and at least one subsequent packet that are transferred to the buffer with the first packet [column 1 lines 23-27, lines 56 to column 2 line 5, column 3 lines 4-19, column 5 lines 27-60, column 6 lines 11-12, fig 1 element 22 shown in figure 4 including descriptor element 74 having a "sub-packet# " field].

6. With regards to claims 9 and 33, Baumert teaches the method of claim 1, wherein the buffer resides in a host memory [fig 2 element 20 and element 22 shown in fig 4 having a plurality of buffer elements 70 and 74 respectively, shown to be host RAM, column 3 lines 4-19], wherein an adapter [fig 1 element 23 shown in detail in fig 2] coupled to the host performs receiving the packets, generating the descriptors, transferring the packets to the buffer, and adding the descriptors to a descriptor array.

7. With further regards to claim 12, Baumert teaches a memory including a plurality of buffers [fig 2 element 20 and element 22 shown in fig 4 having a plurality of buffer elements 70 and 74 respectively];

an Input/Output (I/O) device interface [fig 1 element 23 shown in detail in fig 2] in data communication with the memory and having circuitry enabled to perform the method of claim 1 above [see claim 1 rejection].

8. With regards to claim 20, Baumert teaches the method of claim 1, wherein the I/O device comprises a network adapter [column 2 line 63 to column 3 line 4].

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 19 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,067,300 to Baumert et al. (hereinafter Baumert) in view of US Patent Application Publication No. US 2005/0135356 A1 to Muthukrishnan et al.

9. With regards to claims 8, 19 and 32, Baumert is silent as to the method of claim 1, wherein writing the first packet and each subsequent packet comprises transmitting on a bus the first packet and each subsequent packet capable of fitting into the buffer in a single bus transaction to the buffer. However Muthukrishnan et al. teaches writing a first and a subsequent packet to memory in a burst transaction (a single bus transaction) for the benefit of transferring a lot of data in one cycle or one instruction [paragraph 27].

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of both Baumert and Muthukrishnan et al. to have the writing of the first packet and each subsequent packet comprises transmitting on a bus the first packet and each subsequent packet capable of fitting into the buffer in a single bus transaction to the buffer for the benefit of transferring a lot of data in one cycle or one instruction.

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**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as being directed to packets stored in buffers and tracking said packets using descriptors.

US Patent No. 5,751,951 to Osborne et al.

US Patent No. 6,724,767 to Chong et al.

US Patent No. 6,105,024 to Graefe et al.


US Patent No. 6,151,644 to Wu.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Martinez whose telephone number is (571) 272-4152. The examiner can normally be reached on 8:30-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fritz M. Fleming can be reached on 571-272-4145. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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